



RECEIVED  
CENTRAL FAX CENTER

**North America  
Intellectual Property Corporation**

FEB 22 2005

P.O. BOX 506, Merrifield, VA 22116, U.S.A.

Voice Mail: 302-729-1562

FAX: 806-498-6673

e-mail: [winstonhsu@naipo.com](mailto:winstonhsu@naipo.com)

Customer No.: 27765

**Fax To: NGUYEN, DILINH P**

**Tel : (571) 272-1712**

**Art Unit: 2814**

**Fax: (703) 872-9306**

**From : Winston Hsu, Registration No. 41,526**

**Serial No. : 10/063,880**

**Attorney Docket No.: NAUP0481USA**

**Subject: Information Disclosure Statement (IDS)**

**Total Pages: 21 pages (including cover page)**

**Winston Hsu 2005/02/22**

**NAUP0481USA0\_D1\_1**

PTO/SB/97 (09-04)

Approved for use through 07/31/2006. OMB 0851-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

**Certificate of Transmission under 37 CFR 1.8**

I hereby certify that this correspondence is being facsimile transmitted to the United States Patent and Trademark Office

on 02/22/2005  
Date

Celia Hsieh  
Signature

Celia Hsieh

Typed or printed name of person signing Certificate

Voice Mail: 302-729-1562

Registration Number, if applicable

Telephone Number

**Note:** Each paper must have its own certificate of transmission, or this certificate must identify each submitted paper.

Application No: 10/063,880

(1) Transmittal Form

1 PAGE

(2) Fee Transmittal

1 PAGE

(3) Information Disclosure Statement

17 PAGES

This collection of information is required by 37 CFR 1.8. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1.8 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/SB/21 (09-04)  
Approved for use through 07/31/2006. OMB 0651-0031  
U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

<b>TRANSMITTAL FORM</b>  (to be used for all correspondence after initial filing)	Application Number	10/063,880	
	Filing Date	05/21/2002	
	First Named Inventor	Kuo-Ming Chen	
	Art Unit	2814	
	Examiner Name	NGUYEN, DILINH P	
Total Number of Pages in This Submission	19	Attorney Docket Number	NAUP0481USA

ENCLOSURES (Check all that apply)		
<input checked="" type="checkbox"/> Fee Transmittal Form	<input type="checkbox"/> Drawing(s)	<input type="checkbox"/> After Allowance Communication to TC
<input type="checkbox"/> Fee Attached	<input type="checkbox"/> Licensing-related Papers	<input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences
<input type="checkbox"/> Amendment/Reply	<input type="checkbox"/> Petition	<input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)
<input type="checkbox"/> After Final	<input type="checkbox"/> Petition to Convert to a Provisional Application	<input type="checkbox"/> Proprietary Information
<input type="checkbox"/> Affidavits/declaration(s)	<input type="checkbox"/> Power of Attorney, Revocation	<input type="checkbox"/> Status Letter
<input type="checkbox"/> Extension of Time Request	<input type="checkbox"/> Change of Correspondence Address	<input type="checkbox"/> Other Enclosure(s) (please identify below):
<input type="checkbox"/> Express Abandonment Request	<input type="checkbox"/> Terminal Disclaimer	
<input checked="" type="checkbox"/> Information Disclosure Statement	<input type="checkbox"/> Request for Refund	
<input type="checkbox"/> Certified Copy of Priority Document(s)	<input type="checkbox"/> CD, Number of CD(s) _____	
<input type="checkbox"/> Reply to Missing Parts/Incomplete Application	<input type="checkbox"/> Landscape Table on CD	
<input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53	Remarks	

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT			
Firm Name	North America Intellectual Property Corporation		
Signature	<i>Winston Hsu</i>		
Printed name	Winston Hsu		
Date	FEB 22 2005	Reg. No.	41,526

CERTIFICATE OF TRANSMISSION/MAILING			
I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below:			
Signature			
Typed or printed name		Date	

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/SB/17 (12-04)  
Approved for use through 07/31/2006. OMB 0651-0032  
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Effective on 12/08/2004. Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4318). <b>FEE TRANSMITTAL</b> <b>For FY 2005</b>		<b>Complete if Known</b>	
<input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27		Application Number	10/063,880
<b>TOTAL AMOUNT OF PAYMENT</b> (\$) 0.00		Filing Date	05/21/2002
		First Named Inventor	Kuo-Ming Chen
		Examiner Name	NGUYEN, DINH P
		Art Unit	2814
		Attorney Docket No.	NAUP0481USA

<b>METHOD OF PAYMENT (check all that apply)</b>	
<input type="checkbox"/> Check <input type="checkbox"/> Credit Card <input type="checkbox"/> Money Order <input type="checkbox"/> None <input type="checkbox"/> Other (please identify): _____	
<input checked="" type="checkbox"/> Deposit Account Deposit Account Number: <u>50-3105</u> Deposit Account Name: <u>North America Intellectual Property Corp.</u>	
For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)	
<input checked="" type="checkbox"/> Charge fee(s) indicated below <input type="checkbox"/> Charge fee(s) indicated below, except for the filing fee	
<input checked="" type="checkbox"/> Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17 <input checked="" type="checkbox"/> Credit any overpayments	
WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.	

<b>FEE CALCULATION</b>							
<b>1. BASIC FILING, SEARCH, AND EXAMINATION FEES</b>							
	<b>FILING FEES</b>		<b>SEARCH FEES</b>		<b>EXAMINATION FEES</b>		
<b>Application Type</b>	<b>Fee (\$)</b>	<b>Small Entity Fee (\$)</b>	<b>Fee (\$)</b>	<b>Small Entity Fee (\$)</b>	<b>Fee (\$)</b>	<b>Small Entity Fee (\$)</b>	<b>Fees Paid (\$)</b>
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	
<b>2. EXCESS CLAIM FEES</b>							
<b>Fee Description</b>							<b>Small Entity Fee (\$)</b>
Each claim over 20 or, for Reissues, each claim over 20 and more than in the original patent							50
Each independent claim over 3 or, for Reissues, each independent claim more than in the original patent							200
Multiple dependent claims							360
<b>Total Claims</b>		<b>Extra Claims</b>	<b>Fee (\$)</b>	<b>Fee Paid (\$)</b>	<b>Multiple Dependent Claims</b>		
- 20 or HP =		x	=		Fee (\$)		Fee Paid (\$)
HP = highest number of total claims paid for, if greater than 20							
<b>Indep. Claims</b>		<b>Extra Claims</b>	<b>Fee (\$)</b>	<b>Fee Paid (\$)</b>			
- 3 or HP =		x	=				
HP = highest number of independent claims paid for, if greater than 3							
<b>3. APPLICATION SIZE FEE</b>							
If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).							
<b>Total Sheets</b>	<b>Extra Sheets</b>	<b>Number of each additional 50 or fraction thereof</b>	<b>Fee (\$)</b>	<b>Fee Paid (\$)</b>			
- 100 =	/ 50 =	(round up to a whole number) x	=				
<b>4. OTHER FEE(S)</b>							
Non-English Specification, \$130 fee (no small entity discount)							<b>Fees Paid (\$)</b>
Other:							

<b>SUBMITTED BY</b>			
Signature	<i>Winston Hsu</i>	Registration No. (Attorney/Agent)	41,526
Name (Print/Type)	Winston Hsu	Telephone	302-729-1562
		Date	FEB 22 2005

This collection of information is required by 37 CFR 1.136. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Approved for use through 07/31/2008. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

**Complete If Known**

(Use as many sheets as necessary)

Application Number	10/063,880
Filing Date	05/21/2002
First Named Inventor	Kuo-Ming Chen
Art Unit	2814
Examiner Name	NGUYEN, DILINH P
Attorney Docket Number	NAUP0481USA

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	+
		Country Code <sup>2</sup> Number * Kind Code <sup>3</sup> (# known)	MM-DD-YYYY			
	1	JP 2001-319997	11-16-2001	FUJINO, JUNJI		+
	2	JP 07-161910	06-23-1995	OKUMURA, NAOHISA		+

Examiner Signature	Date Considered
-----------------------	--------------------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbol as indicated on the document under WIPO Standard ST.18 if possible. <sup>6</sup> Applicant is to place a check mark here if English language translation is attached.

This collection of Information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

**PATENT**  
**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicants: Kuo-Ming Chen  
5 Filing Date: 05/21/2002  
Art Unit: 2814  
Serial No.: 10/063,880  
Docket No.: NAUP0481USA

**RECEIVED**  
**CENTRAL FAX CENTER**  
**FEB 22 2005**

10 Title: SOLDER PADS FOR IMPROVING RELIABILITY OF A PACKAGE

To: Commissioner for Patents  
P.O. BOX 1450  
Alexandria, VA 22313-1450

15

Subject: Information disclosure statement under 37 C.F.R. §1.56.

Dear Sir:

20

This is an Information Disclosure Statement in accordance with the duty to disclose information material to patentability under 37 C.F.R. §1.56. The applicant wishes to make of record the document listed on the accompanying form PTO/SB/08. It is respectfully requested that the examiner initials the cited reference on the form and that it be made of record in the application and that a copy of the initialed form be sent to the applicant with the next communication from the examiner.

25

Since the IDS is filed after the mailing of the first Office action after the filing of a request for continued examination and before the mailing date of any of a final action, consideration of the information disclosure statement is hereby requested according to 37 CFR §1.97(c) for stating that each item of information contained in the information disclosure statement was first cited in any communication from a

30

foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement.

5 That each item of information contained in the information disclosure statement was first cited in an office communication from the State Intellectual Property Office of P.R.China in a counterpart China patent application on December 17, 2004, which are no more than three months prior to the filing of the information disclosure statement. The applicant requests that the examiner consider the items contained in this IDS.

10

According to the requirement set forth in 37 CFR §1.98 and MPEP 609, the applicant is submitting a concise explanation of the relevance of each of the cited references (JPH07-161910A and JPH13-319997A) to this application hereinafter.

15

The application (JPH07-161910A) discloses that a **standard size die-pad is divided into a first pad with a semiconductor chip mounted on and a second pad making a dummy to disperse thermal stress.** Furthermore, the thickness of a resin in the upper part of the semiconductor chip and the thickness of a resin in the lower part of the first pad are made equal and the thickness of the upper and the lower part of the second pad are made equal, thereby making structure which is free from the warping and the like. Compared to the claimed invention of the present application, which utilizes second solder pads having a second diameter greater than a first diameter of first solder pads to sustain a stronger thermal stress and a stronger fatigue strength, JPH07-161910A is substantially different from the present application.

20

25 The application (JPH13-319997A) discloses that **semiconductor chips are connected to a plurality single-layer wiring interposers sequentially and hierarchically, the interval of an outer bump pad on the single-layer wiring interposer is set to an integer times of the electrode pitch of the semiconductor chip, and the wiring pattern of each single-layer wiring interposer is simplified.** Also, based on the arrangement of an outer bump where each function is given in advance, the electrode pad arrangement at a semiconductor chip side is determined,

30

thus increasing the degree of freedom in wiring on a mother board. JPH13-319997A never teaches utilizing second solder pads having a second diameter greater than a first diameter of first solder pads to sustain a stronger thermal stress and a stronger fatigue strength. Therefore, JPH13-319997A is substantially different from the present application.

Respectfully Submitted,

10 Winston Hsu

Date: FEB 22, 2005

Winston Hsu, Patent Agent No. 41,526

P.O. BOX 506, Merrifield, VA 22116, U.S.A.

Voice Mail: 302-729-1562

Facsimile: 806-498-6673

15 e-mail : winstonhsu@naipo.com

Note: Please leave a message in my voice mail if you need to talk to me. The time in D.C. is 13 hours behind the Taiwan time, i.e. 9 AM in D.C. = 10 PM in Taiwan).

20